Geometry Honors                                    Mathematician: _____
Unit 6: Congruent Triangles                                         Period:_____
6.4b Proving Triangles are Congruent (SAS & ASA & AAS)
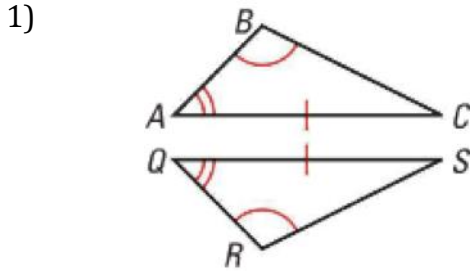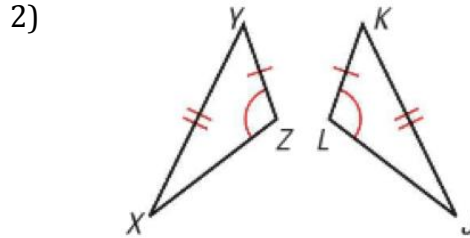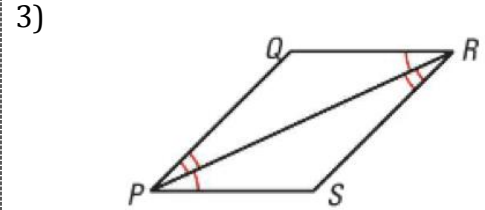
## LEVEL: EMERGING

Directions: Determine if it is possible to prove that the triangles are congruent. If so, state what theorem you would use.

1)



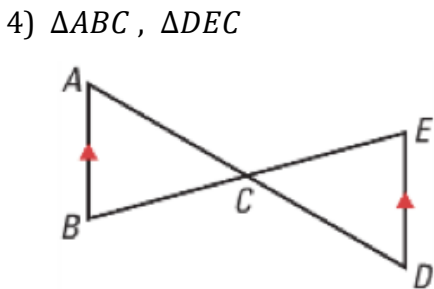Congruent: YES  or  NO

If so, theorem used: _____

2)



Congruent: YES  or  NO

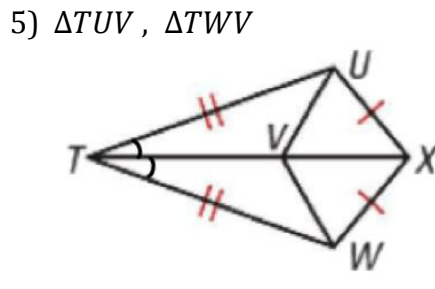If so, theorem used: _____

3)



Congruent: YES  or  NO

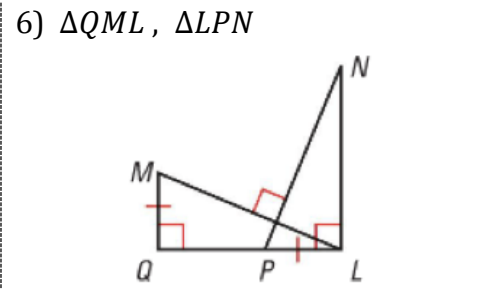If so, theorem used: _____

## LEVEL: PROFICIENT

Directions: Determine if it is possible to prove that the triangles are congruent. If so, state what theorem you would use. If not, then state the additional piece of information needed to prove congruence.

4) $\triangle ABC$ , $\triangle DEC$



Congruent: YES  or  NO

If so, theorem used: _____

If not, extra info: _____

5) $\triangle TUV$ , $\triangle TWV$



Congruent: YES  or  NO

If so, theorem used: _____

If not, extra info: _____
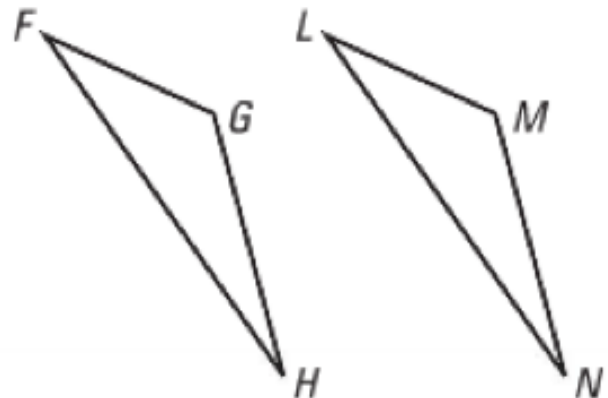
6) $\triangle QML$ , $\triangle LPN$



Congruent: YES  or  NO

If so, theorem used: _____

If not, extra info: _____

Directions: State the third congruence that is needed to prove that $\triangle FGH \cong \triangle LMN$ using the given postulate or theorem.

7) Given: $\overline{GH} \cong \overline{MN}$ , $\angle G \cong \angle M$
Use the AAS Congruence Theorem
                    Answer: _____ $\cong$ _____

8) Given: $\overline{FG} \cong \overline{LM}$ , $\angle G \cong \angle M$
Use the ASA Congruence Theorem
                    Answer: _____ $\cong$ _____

9) Given: $\overline{FH} \cong \overline{LN}$ , $\angle H \cong \angle N$
Use the SAS Congruence Theorem
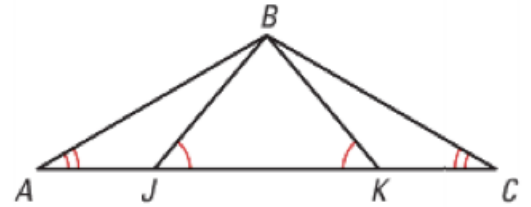                    Answer: _____ $\cong$ _____

Directions: Write a two-column proof

10)     Given: $\overline{AK} \cong \overline{CJ}$ , $\angle BJK \cong \angle BKJ$ , $\angle A \cong \angle C$
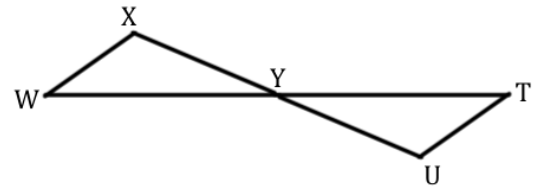
Prove: $\triangle ABK \cong \triangle CBJ$

| Statement | Reason |
|---|---|
|  |  |

11)     Given: $\overline{XU}$ and $\overline{WT}$ bisect each other

Prove: $\overline{WX} \cong \overline{TU}$

| Statement | Reason |
|---|---|
|  |  |

12)     Given: $\angle TSU \cong \angle STR$ , $\overline{RS} \parallel \overline{TU}$

Prove: $\triangle TSU \cong \triangle STR$

| Statement | Reason |
|---|---|
|  |  |